Amendments to the Claims

Listing of Claims:

Claims 1-11 (canceled).

Claim 12 (new). An installation for drying a moisture-containing product, comprising:

an air-dehumidifying apparatus for dehumidifying air, within which moist fresh or ambient air is moved through at least one body formed with a lumpy, granular and/or porous water-vapor adsorbent through which air can flow and which is based on a silicate-containing material, silica gel or the like, and finally the air dehumidified there is directed over the product to be dried, which is arranged in a drying chamber or the like, the dehumidifying of the fresh or ambient air being interrupted within the dehumidifying apparatus when the saturation of the adsorbent body with water is achieved, and the water adsorbed by the adsorbent body being desorbed and expelled from the latter by heating and/or by means of a carrier airflow,

said air-dehumidifying apparatus including at least two installation lanes with:

dehumidifying chambers each disposed downstream of a feed or inlet chamber for moist fresh or ambient air, accommodating said adsorbent body and each having a microwave generator or magnetron for heating said adsorbent body, and at least one discharge on an outflow side for discharging dehumidified air from said dehumidifying chambers;

regeneration-air feeds or charging chambers assigned in each case to one of said dehumidifying chambers and from which, directly or by way of regeneration-air conveying means, regeneration air is directed through said adsorbent body for desorption of water, adsorbed by said adsorbent body from the air laden with moisture from the product to be dried, after saturation of said adsorbent body is achieved; and

on a dry-air outflow side of each of said dehumidifying chambers, a three-way changeover or closing member, shutting off or opening up, in each case in opposition to one another, either a path for the dry-air discharge toward said drying chamber or a path for the regeneration-air feed or charging chamber, or one three-way changeover damper;

said dehumidifying apparatus, for providing regeneration air, having at least one air-conduction line for the air expelled from said drying chamber and containing the moisture received from the product to be dried, and which, for regenerating said adsorbent body laden or saturated with water, can in each case be directed periodically to the regeneration-air feeds or charging chambers or to a regeneration-air charging fan thereof and can be introduced into one of said adsorbent bodies in one of said air-dehumidifying chambers and can be moved therethrough.

Claim 13 (new). The installation according to claim 12, configured for drying a product selected from the group consisting of individual parts and pourable material, biological material, fuels, foodstuffs, and pharmaceuticals with dehumidified air having less moisture than the ambient air or containing a low moisture content of up to 1 g of water/kg of air.

Claim 14 (new). The installation according to claim 12, wherein:

in said dehumidifying apparatus, the fresh or ambient air - in each case in an alternating manner - can flow first through one of the dehumidifying chambers of a first installation lane or its first adsorbent body, regenerated beforehand, with a first microwave generator switched off and with a first three-way changeover or closing member open for the dry-air discharge into the drying chamber and closed toward the regeneration-air feed or charging chamber, in a first direction from the first fresh- or ambient-air feed or inlet chamber toward said dry-air discharge;

while substantially at the same time the regeneration air can flow through the other or second dehumidifying chamber of a second installation lane having the second adsorbent body laden or saturated there with water, with a second

microwave generator switched on and active in terms of heating, and with a second three-way changeover or closing member closed toward the dry-air discharge and open toward the regeneration-air feed or charging chamber, in the second direction, opposed to the first throughflow direction, from the second regeneration-air feed or charging chamber to the second fresh- or ambient-air feed or inlet chamber; and

wherein, during a significant increase in the moisture content of the dehumidified air, flowing through the dry-air discharge toward the drying chamber and flowing out of the first adsorbent body of the first installation lane, beyond a respectively predetermined moisture level and/or during a decrease in the moisture of the regeneration air leaving the dehumidifying chamber and then flowing through the respective fresh- or ambient-air inlet chamber of the second installation lane and finally delivered to the environment;

by changeover of each of the three-way changeover or closing members, this changeover being controlled by means of the monitoring and control unit supplied with measuring data from sensors (89, 89', 89"; 86, 86'), the first dehumidifying chamber containing the now water-laden first adsorbent body of the first installation lane, with the first microwave generator there being switched on or activated, can be changed over to adsorbent regeneration operation, and the second dehumidifying chamber, containing the freshly regenerated adsorbent body, of the second installation lane, after the second microwave generator there has been switched off, can be changed over to air-dehumidifying operation.

Claim 15 (new). The drying installation according to claim 12, wherein:

for the movement or conveying of the fresh or ambient air through the respective adsorbent body and of the air dehumidified by means of the latter through the dry-air discharge of the air-dehumidifying apparatus, at least one suction fan - generating a vacuum, preferably of about 100 to 400 mbar, lying below the ambient pressure, in said discharge - is arranged in the dry-air discharge, and the dry air can be introduced on the pressure side by means of this suction fan, at a positive pressure lying above the ambient pressure, into the

drying chamber containing the product to be dried or can be moved fluidically through the chamber and over or through the material; or

in place of the suction fan in the dry-air discharge, a suction fan is arranged in the discharge of the drying chamber, this discharge being provided for expelling the air, laden with the moisture extracted from the product to be dried, from the drying chamber.

Claim 16 (new). The drying installation according to claim 12, wherein each of the two regeneration-air feeds or charging chambers is provided with a separate fan for introducing regeneration air coming from the drying chamber and for delivering the regeneration air under positive pressure through said adsorbent body to be regenerated in each case.

Claim 17 (new). The drying installation according to claim 12, which comprises one common fan for introducing regeneration air coming from the drying chamber and for delivering the regeneration air under positive pressure through said adsorbent body to be regenerated, wherein said common fan can in each case be changed over so as to supply each of these two feeds or chambers with regeneration air.

Claim 18 (new). The drying installation according to claim 12, wherein:

said dehumidifying apparatus, in place of regeneration-air feeds or charging chambers, has at least two discharges for dehumidified air which are separate from one another and are in each case assigned to one of the dehumidifying chambers with their respective adsorbent body of the installation lanes and which are connected to the drying space via air-conduction lines which are connected to said discharges and open into the drying chamber containing the material to be dried or start from there,

said dry-air discharges connected to the air-conduction lines opening into the drying chambers or starting from the latter are at the same time regeneration-

air feeds or charging chambers for air fed back as regeneration air and laden with moisture of the material to be dried, and

in each case a first and a second suction fan are arranged in a first and in a second air-inlet/outlet opening of the air-inlet chamber, in which arrangement, in each case in an alternating manner or in such a way as to be capable of being changed over periodically, air or ambient air, by means of the second suction fan put into operation and held in operation by the control unit - with the first suction fan stopped at the same time - can be drawn successively through the first installation lane, comprising the first fresh- or ambient-air feed or inlet chamber, the first adsorbent body and the first dry-air discharge, further through a first air-conduction line, into and through the drying space containing the product to be dehumidified and then further, with air laden with moisture from the dehumidified product, as regeneration air via a second air-conduction line, through the installation lane, comprising the second regeneration-air feed or charging chamber, the second adsorbent body, delivering the water adsorbed by it to the regeneration air - when the second microwave generator is put into operation from the control unit - and the second fresh-air feed or inlet chamber, of the dehumidifying apparatus and can finally be delivered to the environment; and

wherein, after regeneration of the second adsorbent body has been completed, the second suction fan and the second microwave generator can be shut down and the first suction fan and the first microwave generator of the first dehumidifying chamber can be put into operation, likewise by means of the control unit, and the fresh or ambient air can now be drawn in the opposite direction first through the second installation lane of the dehumidifying apparatus, through the drying space containing the product to be dried, and finally through the first installation lane of the air-dehumidifying apparatus and can finally be delivered as doubly moist regeneration air to the environment.

Claim 19 (new). The drying installation according to claim 18, wherein a suction fan assisting the respectively operating suction fan of the air-inlet chamber and put into operation and held in operation synchronously with said suction fan is in

each case additionally disposed in both the first and the second installation lane in each case in the region of the transition from the dry-air discharge to the first air-conduction line leading into the drying chamber and in the region of the transition of the second air-conduction line, coming from the drying chamber, into the regeneration-air feed or charging chamber.

Claim 20 (new). The drying installation according to claim 12, wherein:

said dehumidifying apparatus has at least two dry-air discharges for dehumidified air which are separate from one another and are in each case assigned to one of the dehumidifying chambers with their respective adsorbent body of the installation lanes and which are connected to the drying space via the air-conduction lines which are connected to said discharges and open into the drying space containing the material to be dehumidified;

said dry-air discharges are at the same time regeneration-air feeds or charging chambers for air discharged from the drying chamber and laden with the moisture from the material to be dried;

a suction fan is disposed in one of said air-conduction lines;

said suction fan is disposed to successively draw fresh or ambient air through the first air feed or inlet chamber, through the first adsorbent body, and through the first dry-air discharge of a first installation lane, further via the first air-conduction line through the drying space containing the product to be dehumidified, and then further with the moisture from the dehumidified product, and the moist air, which is under the pressure-side pressure of the suction fan, is moved or conveyed as regeneration air via an air-conduction changeover member, in particular a cross changeover damper, the second regeneration-air feed or charging chamber, the second adsorbent body, delivering the moisture to the regeneration air by means of the second microwave generator put into operation and held in operation by the control unit, in the second dehumidifying chamber and the second air-inlet chamber, through which the air originating from the product to be dehumidified and containing the water desorbed by the

adsorbent body has flowed, of the second installation lane and is finally delivered to the environment; and

wherein, by way of the control unit, after regeneration of the second adsorbent body has been completed, the air-conduction changeover member, in particular the cross changeover damper, can be changed over and, when the second microwave generator is switched off essentially at the same time by means of the control unit, the first microwave generator of the first dehumidifying chamber of the first installation lane can be put into operation, and the fresh or ambient air, by means of the suction fan in the air-conduction line, can now be successively drawn in the opposite direction first through the second installation lane, via the first air-conduction line and through the drying space containing the product to be dehumidified and is then moved or forced, under the pressure-side pressure of the suction fan, through the first installation lane of the air-dehumidifying apparatus and is finally delivered to the environment.

Claim 21 (new). The drying installation according to claim 20, wherein the fresh-air and ambient-air feeds, through which doubly moisture-laden regeneration air and fresh or ambient air can flow in each case in an alternating manner, is a heat exchanger which transfers heat of the doubly moisture-laden regeneration air, discharged from the microwave-heated adsorbent body, of one of the installation lanes into fresh or ambient air directed into the respectively regenerated adsorbent body of the respective other installation lane.

Claim 22 (new). The drying installation according to claim 20, wherein:

fresh-air partial flow or bypass lines bypassing the installation lanes branch off from the fresh- or ambient-air feeds, which fresh-air partial flow or bypass lines open into the air-conduction line connected to the drying space, in each case in such a way that they can be regulated in terms of flow rate by means of a shut-off member, and by means of which fresh-air partial flow or bypass lines, in addition to the air dehumidified in each case when passing through one of the installation

lanes, a partial flow of fresh or ambient air can be introduced into the air-conduction line; and

said two fresh-air partial flow lines are connected to one another by a connecting line having a short-circuit member, in particular a short-circuit damper.

Claim 23 (new). The drying installation according to claim 22, which further comprises an airflow choke or closing member disposed in said air-conduction line for setting a respectively desired vacuum in said drying chamber.

Claim 24 (new). The drying installation according to claim 22, which comprises moisture measuring sensors for determining or measuring the moisture content of the air dehumidified by way of said first adsorbent body in the installation lane which is in dehumidifying operation in each case or of the moisture-laden regeneration air coming out of the microwave-heated, second adsorbent body of the second installation lane, respectively disposed in each of said two fresh-air or ambient-air feeds or inlet chambers of the two installation lanes of the air-dehumidifying apparatus and at least in the dry-air discharge, wherein said moisture measuring sensors are connected for the flow and exchange of measuring data to the monitoring and control unit, which is connected for the flow and exchange of control data to the closing members, which can be changed over in each case in opposition to one another, or else to the air-conduction changeover member, and optionally to an airflow choke or closing member and/or to a short-circuit member.

Claim 25 (new). The drying installation according to claim 24, wherein said measuring sensor includes a temperature compensator.

Claim 26 (new). The drying installation according to claim 24, wherein said air-conduction changeover member is a cross-changeover damper, and said short-circuit member is a short-circuit damper.

Claim 27 (new). The drying installation according to claim 24, which comprises, in

addition to or as an alternative to said moisture measuring sensors, a sensor for detecting a significant change in a current intensity or voltage of a power consumed by the microwave generator, and wherein said sensor is connected to said monitoring and control unit, which is connected for the flow and exchange of control data to the three-way changeover members, or to the air-conduction changeover member and optionally also to the short-circuit damper and/or airflow choke or closing member, and/or to the suction fans which can be put into operation or switched off in each case in opposition to one another.

Claim 28 (new). An installation for drying a moisture-containing product, comprising:

an air-dehumidifying apparatus for dehumidifying air, at least one adsorbent body disposed in said air-dehumidifying apparatus, wherein the air, after dehumidification in said adsorbent body is directed over the product to be dried;

wherein a dehumidification of fresh or ambient air in said dehumidifying apparatus is interrupted when a saturation of said adsorbent body with water is achieved, and the water adsorbed by said adsorbent body is desorbed and expelled by at least one of heating and by way of a carrier airflow;

said air-dehumidifying apparatus including at least two installation lanes with:

dehumidifying chambers each disposed downstream of a feed or inlet chamber for moist fresh or ambient air, accommodating said adsorbent body and each having a microwave generator or magnetron for heating said adsorbent body, and at least one discharge on an outflow side for discharging dehumidified air from said dehumidifying chambers;

regeneration-air feeds or charging chambers assigned in each case to one of said dehumidifying chambers and from which regeneration air is directed through said adsorbent body for desorption of water, adsorbed by

said adsorbent body from the air laden with moisture from the product to be dried, after saturation of said adsorbent body is achieved; and

on a dry-air outflow side of each of said dehumidifying chambers, a three-way changeover or closing member, shutting off or opening up, in each case in opposition to one another, either a path for the dry-air discharge toward said drying chamber or a path for the regeneration-air feed or charging chamber;

said dehumidifying apparatus, for providing regeneration air, having at least one air-conduction line for the air from said drying chamber and containing the moisture received from the product to be dried, and which, for regenerating said adsorbent body laden or saturated with water, can in each case be directed periodically to the regeneration-air feeds or charging chambers or to a regeneration-air charging fan thereof and can be introduced into one of said adsorbent bodies in one of said air-dehumidifying chambers and can be moved therethrough.